

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**St. Gabriel Plant
Air products and Chemicals, Inc.
Agency Interest Number: 3263
Activity Number: PER20020001
Draft Permit 1280-00031-V2**

I. APPLICANT:

Company:

Air Products and Chemicals, Inc.
P. O. Box 1
St. Gabriel, LA 70776

Facility:

St. Gabriel Plant
3790 Hwy 30
St. Gabriel, LA 70776
Approximate UTM coordinates are 684.20 kilometers East and 3347.80
kilometers North, Zone 15
SIC Code: 2869

II. FACILITY AND CURRENT PERMIT STATUS:

The St. Gabriel Plant is designed to manufacture higher alkylamines from ammonia and appropriate alcohols via two continuous process trains that each produces separate types of alkylamines. Each train is divided into a reaction and distillation operation. In the reaction operation, the raw materials are vaporized, reacted in the gas phase over fixed beds of catalysts, and cooled to separate non-condensable by-products. In the distillation process, the desired amine product is separated from unreacted raw material and light and heavy by-products.

**St. Gabriel Plant
Air Products & Chemicals, Inc.
St. Gabriel, Iberville Parish, Louisiana
Agency Interest Number: 3263
Activity Number: PER20020001
Draft Permit 1280-00031-V2**

The facility submitted timely applications for initial Part 70 permits and continues to operate pursuant to the "application shield" provided in the program.

In addition, the facility has one state permit that will remain effective until replaced by a Part 70 permit. This is:

Permit #	Units or Sources	Date Issued
N/A		

Several Part 70 permits addressing portions of the facility have already been issued. These include:

Permit #	Units or Sources	Date Issued
N/A		

III. PROPOSED PERMIT / PROJECT INFORMATION:

Proposed Permit

A permit application and Emission Inventory Questionnaire was submitted by Air Products, Inc. on January 7, 2002 and a revised application on June 6, 2006 requesting a Part 70 permit renewal.

Project Description

The proposed updates are as follows:

1. Update emission estimations to improve calculation methodology;
2. Include operational flexibility to Emission Points 4-76, 5-76, 8-76B, 8-76F, 8-76G, 8-76H, and 8-76I to incorporate use of several types of service;
3. Delete a process heater (Emission Point 7-76), a vacuum system vent (Emission Point 2-87), a cooling tower (Emission Point 8-96), and a tank (Emission Point 11-96). These emission sources are no longer in service;
4. Revise EIQ sheets to reflect correct information (i.e. – construction dates, operating rates, etc);
5. Revise the General Condition XVII and Insignificant Activity lists;
6. Rerun tank emission estimations using the latest version of EPA's tank program (TANK4.09d);
7. Consolidate individual wastewater emission sources (Emission Point 1-87, 1-96, 2-96, 3-96, 4-96, 5-96, 6-96, 12-96, and 38-96) as one wastewater emission point unit (Emission Point WW-06). Use EPA's Water 9 program to estimate emissions from this unit;
8. Add startup/shutdown emissions from tank TK-500; and

**St. Gabriel Plant
Air Products & Chemicals, Inc.
St. Gabriel, Iberville Parish, Louisiana
Agency Interest Number: 3263
Activity Number: PER20020001
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9. Add the NO_x Optional Compliance Plan dated May 15, 2006.

Permitted Air Emissions

Estimated emissions in tons per year are as follows:

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>
PM ₁₀	10.38	13.92	+ 3.54
SO ₂	0.45	0.48	+ 0.03
NO _x	105.21	115.84	+ 10.63
CO	26.20	3.32	- 22.88
VOC	53.88	64.70	+ 10.82

Toxic Air Pollutant

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>
Ammonia	9.01	9.69	+ 0.68
Acetaldehyde	-	0.21	+ 0.21
Chlorine	0.01	0.01	-
Ethylene Glycol	-	0.70	+ 0.70
Ethylene Oxide	-	<0.01	< 0.01
Sulfuric Acid	<0.001	<0.001	-
Triethylamine	5.09	3.97	- 1.12
Total	14.11	14.58	+ 0.47

Regulatory Analysis

This permit was reviewed for compliance with 40 CFR 70, the Louisiana Air Quality Regulations, and New Source Performance Standards (NSPS). NESHAP and Prevention of Significant Deterioration do not apply.

This facility is a minor source of toxic air pollutants (TAPs) pursuant to LAC 33:III.Chapter 51.

**St. Gabriel Plant
Air Products & Chemicals, Inc.
St. Gabriel, Iberville Parish, Louisiana
Agency Interest Number: 3263
Activity Number: PER20020001
Draft Permit 1280-00031-V2**

Louisiana Air Quality Regulations and NSPS

The applicability of the appropriate regulations is straightforward and provided in the Facility Specific Requirements Section of the draft permit, or Section X of the Air Permit Briefing Sheet. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Facility Specific Requirements Section of the draft permit, or explained in Section XI of the Air Permit Briefing Sheet.

Prevention of Significant Deterioration Applicability

The St. Gabriel Plant is an existing facility. Therefore, the PSD regulations do not apply.

MACT Requirements

MACT is not required.

Air Modeling Analysis

Air Modeling Analysis is not required.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to Section VIII of the draft Part 70 permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the draft Part 70 permit.

IV. Permit Shields

A permit shield was not requested.

V. Periodic Monitoring

The Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Facility Specific Requirements Section of the proposed permit.

St. Gabriel Plant
Air Products & Chemicals, Inc.
St. Gabriel, Iberville Parish, Louisiana
Agency Interest Number: 3263
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VI. Applicability and Exemptions of Selected Subject Items		
ID No:	Requirement	Notes
	See Tables X and XI of Air Briefing Sheet	

VII. Streamlined Requirements			
Unit or Plant Site	Programs Being Streamlined	Stream Applicability	Overall Most Stringent Program
St. Gabriel Plant	NSPS Subpart VV – Standard of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (40 CFR 60.480)	≥10% VOC	LAC 33:III.2122
	LAC 33:III.2122-Louisiana Fugitive Emission Control for Specified Parishes	≥10% VOC	

**St. Gabriel Plant
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Draft Permit 1280-00031-V2**

Glossary

Best Available Control Technologies (BACT) - An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under this part which would be emitted from any proposed major stationary source or major modification which the administrative authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

Carbon Monoxide (CO) – A colorless, odorless gas which is an oxide of carbon.

Grandfathered Status- Those facilities that were under actual construction or operation as of June 19, 1969, the signature date of the original Clean Air Act. These facilities are not required to obtain a permit. Facilities that are subject to Part 70 (Title V) requirements lose grandfathered status and must apply for a permit.

Maximum Achievable Control Technology (MACT) - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

New Source Review (NSR) - A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C (“Prevention of Significant Deterioration of Air Quality”) and D (“Nonattainment New Source Review”).

Nitrogen Oxides (NO_x) - Compounds whose molecules consists of nitrogen and oxygen.

National Emission Standards for Hazardous Air Pollutants (NESHAP) – Toxic air emission standards for specific types of facilities, as outlined in 40 CFR Parts 61 through 63.

Nonattainment New Source Review (NNSR) - A New Source Review permitting program for major sources in geographic areas that do not meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. Nonattainment NSR is designed to ensure that emissions associated with new or modified sources will be regulated with the goal of improving ambient air quality.

**St. Gabriel Plant
Air Products & Chemicals, Inc.
St. Gabriel, Iberville Parish, Louisiana
Agency Interest Number: 3263
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Organic Compound - Any compound of carbon and another element. Examples: Methane (CH₄), Ethane (C₂H₆), Carbon Disulfide (CS₂)

PAI Pesticide Active Ingredient MACT – any facility that is subject to 40 CFR 63 Subpart MMM

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM₁₀- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO₂) – An oxide of sulphur.

Title V permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.